FOUR SOUTH AMERICAN GEOMETRID MOTHS APPARENTLY UNDESCRIBED

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It is with a certain feeling of inadequacy that the author undertakes this paper. During the past ten years as time has permitted, the author and the late Mrs. Sperry have been working with the lepidoptera of South and Central America and as a multitude of information accumulates the author feels even more that his knowledge of the Neotropical fauna is entirely inadequate. Nevertheless a beginning has to be made and as there are a few among the many unknowns which seem to be definitely undescribed, the author makes bold to give these a name and at the same time to tender his thanks to Dr. J. F. Gates Clarke of the U. S. National Museum who so kindly sent the species from Chile and to Mr. D. S. Fletcher of the British Museum staff who has so kindly checked these species for us and who is directly responsible for much of the author's South American Geometrid information.

Callipia brenemanæ, sp. n.

This is a bright and striking Larentid, belonging in Warren's subfamily Eucestiinæ and closest (as Mr. Fletcher has pointed out) to *Callippia constantinaria* Ober. from Peru.

Head, front, palpæ and simple antennæ black with a slight brownish cast. Palpi rough scaled, porrect, about 1¼ the diameter of the eye, third joint close scaled. Prothorax black, hairy, with lateral tufts of orange hair, orange beneath. Meso and meta thorax with latero-dorsal tufts of long tan-gray hair. Abdomen sparsely sealed, fuscous above, black beneath with orange blotches laterally, low on the second, third and fourth segments. Legs gray-black, femur shortly and densely hairy. Forewings: Costa, light pinkish cinnamon, more or less mottled with black in a strip slightly over 1 mm. in width; rest of wing dark gray-black with the exception of the large orange blotch, about 15 mm. x 18 mm. which covers much of the basal and median areas. The border of this orange area begins at the base of the wing, follows the costal edge of the cell to vein 6, thence curves in the arc of a circle to a point 1 mm. above vein 1, approaching to about 3 mm. from outer margin and reaching the point above vein 1 at about that distance from the tornus, thence back parallel to vein 1 to the base. The

lower edge of the cell to a point beyond vein 4 is more or less heavily edged on both sides of the vein with black with slight excursions, especially in the ♀, out along veins 2 and 3. Fringes short, concolorous with the black part of the wing; no discal dot,

Hind wings: Immaculate, dark mouse gray, fringes concolorous. Discal dot absent.

Beneath: Orange area on forewing as above, costa and apical area above vein 6, honey yellow, merging into light cinnamon-brown, rest of wing as above.

In the ♀ the honey-yellow area more extended than in ♂. Hindwings have a black ground color with cream white veins and many fine white lines arranged in pairs perpendicular to the veins, crossing and irrorating the entire wing. These fine white lines are closely merged into an irregular bar beyond the cell between veins 1 and 4. Above line 4 part of the black ground color is replaced by cinnamon, giving the wing a marbled appearance. Fringes mouse gray, discal dot absent.

Expanse ♂ 45 to 50 mm., ♀ 52 to 55 mm.

Holotype, ♂. Yungas del Palmar, Bolivia, 2000 m., Mar. 15, 1949 and in the Sperry collection.

Allotype, ♀. Same data Mar. 30, 1949 in the Sperry collection.

Paratypes: 8 ♂, 3 ♀, same locality, Sept. 1948 and Apr. and Feb. 1949 and Chapare, Bolivia, Dec. 8, 1949 Peña coll. and in the United States National Museum, British Museum, the Ham collection in Enterprise, Oregon and collection Sperry.

This species is closest to *constantinaria* Ober. of which species Mr. Fletcher has kindly sent me 2 ♂ ♂ for comparison. These are easily separated, as the shape of the orange area on the forewing differs constantly. In *constantinaria* this starts as in *brenemanæ,* follows the costal edge of the cell to vein 4 then curves down to or shortly beyond vein 2, thence along or parallel to vein 2 to the cell and so back to the base, making a smaller, narrower and more angular orange area.

The author has only examined the ♂ genitalia and the acquiring of ♀ specimens may show this species to be a Bolivian form of *constantinaria* for the ♂ genitalia offers few good differences. In *brenemanæ* the ampullæ are shorter and chunkier and the open space at the base of the valvæ is pointed toward the spine at the tip of the sacculus instead of being rounded as in *constantinaria.*

It is with deep appreciation that the author names this fine species in honor of Mrs. Dorothy Jean Breneman Ham, of Enterprise, Oregon.

Artist, craftsman and scientist in her own right, she, with her husband, Dr. Lyle C. Ham, took the author into their home and hearts and did more than any other persons to make it possible for him to carry on during the black days following Grace's passing.

The author has in the Sperry collection a single specimen of what is probably an environmental form of *Callipia constantinaria* Ober. The latter and the Bolivian specimens of *brenemanæ* are taken at altitudes above 2000 m. This specimen is from the edge of the jungle at a lower altitude and is distinguished by its smaller size (44 mm. to about 52 mm. for *constantinaria*) the jet black ground color of both wings as compared with the distinct brownish cast of *constantinaria* and the shape of the lower border of the orange area which goes from the lowest point of the curve at vein 2 directly to the base without following the vein to the cell. Expanse 44 mm. The author suggests for this form the name HAMARIA.

Holotype: ♂, Satipo, Peru, May 1948 Pedro Paprzycki, coll. and in the Sperry collection.

The author takes great pleasure in naming this bright form in honor of Dr. C. Ham of Enterprise, Oregon. Doctor, scientist, councilor and friend in great need.

Spargania randallæ, sp. n.

This Chilean species looks close to the genus *Anapalta,* Warr. excepting for the double ærole on the forewing and the tiny cillia on the antennæ. The ♀ genitalia however places it in or close to the genus *Spargania* Guenee.

Female: Palpi short 1¼ the diameter of the eye, porrect or with third joint upturned, third joint close scaled, rest rough scaled black and white. Front sandy with brown, black and white scales. Vertex and collar white. Antennæ white, ringed with narrow, brown bands, simple, lightly ciliate. Thoratic vestiture scales mixed with long hairs, mostly white with black specklings. White below. Abdomen dark dorsally with small white spots on each segment, laterally and beneath white. Legs close scaled, mostly white with specklings of black dots.

Forewings: The basal area, 1 mm. wide is white, the outer edge with an outward scallop below costa and in cell. Basal band fuscous, 1 mm. wide and followed by a slightly lighter area of the same size, both with irregular margins, the bands narrowing at inner margin. The median fascia is violet fuscous and extends on the costa to within 3 mm. from the apex, its outer edge rund

perpendicular to costa to vein 7 thence with a deep inward scallop to vein 4, thence to inner margin 3 mm. in from tornus.

There is a median broken band of white in the fascia; the upper looks like a horse's head with the neck at the costa, short ears toward the outer margin and nose between lines 2 and 3 below the cell. The eye is a long dark discal dash. There is a tiny white spot below vein 2 and a larger one at vein 1; a still larger spot is centered on the inner margin. These are ringed with fuscous and paralleled with outer dark lines. The subterminal area is lighter with heavy speckling of fuscous and broken parts of a dark subterminal line, strongest near the inner margin. There is a narrow fuscous, terminal line. Fringes white with dark mottling.

Hindwings: White, sparsely peppered with fuscous scales, especially in subterminal area. T.p. line indicated by dim, fuscous dots on the veins.

Fringes white. Discal dot below showing through.

Beneath: Forewings dull fuscous with outer edge of median fascia indicated by a lightening of the scaling, subterminal area lighter than the rest of the wing. Discal dash and terminal line present. Fringes as above.

Hindwings white. T.p. line of fuscous scallops with points inward on the veins. Discal dash strong. Fringes as above. Expanse 37 mm.

Holotype ♀ Pudahuel, Chile, I, '48, T. Ramirez, coll. and in the collection of the United States National Museum.

Paratype: ♀ Guayácan, Santiago Prov., Chile, 5-12, XII, 1947, Tito Ramirez, coll. and in the Sperry Collection.

It gives me fond pleasure to name this beautiful insect in honor of my wife, Bertha Randall Minor Sperry, who, having lost her dearest one, even as have I, still finds the courage to bring happiness to the last years of this entomologist.

It will require more material to place this insect accurately. The form and maculation of the wings makes it look closer to *Perizoma africana* Warr. than anything else known to the author but 6 and 7 in the hindwings are short stalked or connate and the ♀ bursa, almost bilobed, places it in or close to *Spargania* Guenee.

Salpis clarkei, sp. n.

♂ ♀ Palpi moderate, about 2x diameter of the eye, second joint heavily and loosely clothed with a triangular scale and hair tuft, third joint long, its scales appressed, mouse gray. Front slightly bulging, clothed loosely with scales and hair, mouse gray.

Vertex cream. Antennæ simple in both sexes, not ciliate. Prothorax mouse gray, meso and metathorax and abdomen light gray, peppered with mouse gray scale tips; under side light gray. Legs close scaled, femur light hairy.

Forewings: Bluntly subfalcate, sharper in ♀ outer margin lightly and bluntly toothed a tline 6, light cream gray, peppered sparsely with mouse-gray scales from base to discal spot, mouse-gray beyond to outer margin.

There are traces of a broken t.a. line accentuated by dark dots on vein 1 and the cell, and a dim line between costa and cell angling backward toward the base. Discal dot distinct and annulate. T.p. line from ¾ out on costa is marked by small dark dots on the veins, it is subparallel to outer margin. Terminal dark dots between the veins. Fringe concolorous with outer area.

Hindwings: Cream gray, small annulated discal spot. T.p. line, 2/3 out from base indicated by dark dots on veins, line subparallel to outer margin.

Fringes concolorous.

Underside: Both wings light gray, in ♀ dusted with fuscous, dark discal dots and a line of black points terminally between the veins. Fringes concolorous. Expanse ♂ 42 mm., ♀ 52 mm.

Holotype, ♂, Cajon de Maypo, Santiago Prov., Chile Cordillera, El Canelo, 12-20, I, 1948 Tito Ramirez, coll. and in the collection of the United States National Museum.

Allotype: Same data and in the Sperry Collection.

This species belongs in the subgenus I of Prout although the hind tibia of the ♂ lacks the hair pencil and is not swollen. The species would seem to be close to *œnea* Butler but lacks the heavy discal spots and terminal black line, the swollen hind tibia of the male and hair pencil.

Also the margins of the wings in both sexes are only slightly toothed.

It is indeed a great pleasure to name another fine moth in honor of my good friend, Dr. J. F. Gates Clarke of the U. S. National Museum, in grateful memory of many kindnesses both past and present, extended to the author over many years.